

Amendments to the Specification:

Kindly add the following new paragraphs on the bottom of page 4 of the present application, as filed, after the brief description of FIG. 2:

FIG. 3 is a schematic view of an assembly of a substrate, barrier layer and solder bump according to the present invention; and

FIG. 4 is a schematic view of the assembly of FIG. 3 after heat treatment.

Kindly replace the paragraph on page 5, lines 3-9, of the present application, as filed, with the following amended paragraph:

A barrier layer 10 having excellent wettability with a Sn-Pb solder bump is formed with a Ni-Cu alloy series (hereinafter referred to as the “Ni-Cu alloy series”) sputtering target of the present invention comprising 1 to 30at% of Cu; 2 to 25at% of at least one element selected from among V, Cr, Al, Si, Ti and Mo; remnant Ni and unavoidable impurities, and this is formed on a substrate 12 such as a semiconductor wafer or electronic circuit or a substrate layer or pad 14 of the wiring or electrode formed thereon; in particular, on a substrate layer or pad 14 formed from copper or copper alloy. For instance, see FIG. 3.

Kindly replace the paragraph on page 5, lines 22-26, of the present application, as filed, with the following amended paragraph:

A Pb-free Sn solder bump or Sn-Pb solder bump 16 is further formed on the barrier layer 10 formed with the Ni-Cu alloy series sputtering target of the present invention, and the diffusion of Sn as the component of this solder bump 16 can be effectively inhibited with the barrier layer 10 of the present invention, and the reaction with the substrate 12 or copper layer as the substrate layer 14 can be effectively prevented.

Kindly replace the paragraph on page 5, line 27, to page 6, line 2, of the present application, as filed, with the following amended paragraph:

The addition of 1 to 30at% of Cu to Ni has a Sn diffusion prevention function. Since Cu is exceptionally reactive to Sn in comparison to Ni, an intermetallic compound (Cu_6Sn_5 , Cu_3Sn) layer 18 of Cu-Sn is formed between the solder 16 via heat treatment. This layer 18 exhibits an effect as a diffusion barrier. See FIG. 4.